**ABSTRACT:**

The chassis frame forms the backbone of a heavy vehicle; its principle function is to safely carry the maximum load for all designed operating conditions. This paper describes design and analysis of heavy vehicle chassis. Weight reduction is now the main issue in automobile industries. In the present work, the dimensions of an existing heavy vehicle is taken for modeling and analysis of a heavy vehicle chassis with three different materials subjected to the same pressure as that of a steel chassis. The design constraints were stresses and deflections. The three different heavy vehicle chassis have been modeled by SOLID WORKS 2014 SOFTWARE. For validation the design is done by applying the vertical loads acting on the horizontal different cross sections. Software is used in this work SOLID WORKS for modeling and analysis.